As correctly indicated in the Office Action Summary, Claims 1-13 are pending in the application and are under consideration, and Claims 14-28 have been withdrawn from consideration.

Applicants' cancellation of the subject matter by the amendments to Claims 1, 5, 9 and 10 is done without prejudice or disclaimer and serves to more distinctly claim the subject matter of the elected invention. Applicants reserve the right to pursue the canceled subject matter in a divisional and/or continuation application. Support for these amendments can be found at least in the claims as originally filed. These amendments do not introduce any prohibited new matter.

I. SEQUENCE LISTING

Applicants submit with this Amendment and Reply a new Sequence Listing in computer readable form which contains the two sequences listed in the specification at page 88 (SEQ ID NOS: 11325 and 11326) of the specification, the corresponding statement asserting that no new matter is being submitted. Given the new rules and length of the Sequence Listing, the Sequence Listing is being submitted on CD-ROM in triplicate without a paper copy.

II. REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 1-13 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which application regards as the invention. Applicants have canceled, without prejudice or disclaimer, the subject matter relating to the non-elected invention. Applicants reserve the right to file a

continuation or division application(s) to pursue the canceled subject matter. Said cancellation of the non-elected invention was indicated, in the Action, as a means of overcoming the rejection. Accordingly, Applicants respectfully request the withdrawal of the rejection.

III. REJECTIONS UNDER 35 U.S.C. § 101

Claims 1-13 were rejected under 35 U.S.C. § 101 because "the claimed invention is not supported by a specific, credible and substantial asserted utility or a well established utility for the elected invention of SEQ ID NO: 7056."

According to the Guidelines, to establish a *prima facie* showing that a claimed invention has no utility, an Examiner must establish that it is more likely than not that a person of ordinary skill in the art would not consider credible any utility for the claimed invention. Moreover, Examiners must "treat as true credible statements made by an Applicant . . . unless they can show that one of ordinary skill in the art would have a rational basis to doubt the truth of such statements." (Utility Guidelines at page 2, last paragraph.)

Applicants respectfully traverse the rejection, because Applicants assert a utility for the polypeptide of SEQ ID NO: 7056 and the nucleic acid sequence encoding therefor (SEQ ID NO: 1394). The nucleic acid of SEQ ID NO: 1394 is an isolated nucleic acid. The nucleic acid of SEQ ID NO: 1394 comprises an open reading frame (ORF) encoding a complete protein found in *Enterobacter cloacae*. *E. cloacae* is associated with urinary tract infections and respiratory tract infections, as well as a complicating infectious agent which infects surgical patients and burn victims (*See* specification on pages 1 to 3). Thus, the nucleic acid of SEQ ID NO: 1394 and the polypeptide encoded thereby come from an

organism known to cause disease. As recently set forth during the Biotechnology Day at the U.S. Patent and Trademark Office held October 18, 2000, Brian Stanton summarized the USPTO utility policies; he stated, that unlike for expressed sequence tags (i.e., ESTs), utility exists for isolated DNA derived from organisms known to cause disease. Applicants disclose an isolated nucleic acid and its corresponding polypeptide. The nucleic acid and corresponding polypeptide are found in *E. cloacae*, a disease causing organism. Such a nucleic acid and its corresponding polypeptide, can for example, be used to prevent *E. cloacae* infections and/or to screen for agents which inhibit or prevent *E. cloacae* infections. These are credible utilities for SEQ ID NO: 1394 and its corresponding polypeptide sequence (SEQ ID NO: 7056). Accordingly, in light of the above argument, Applicants respectively request the appropriate withdrawal of the rejection of claims 1-13 under 35 U.S.C. § 101.

IV. REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 1-13 were rejected under 35 U.S.C. § 112, first paragraph, specifically, "since the claimed invention is not supported by either a specific, credible and substantial asserted utility of a well established utility. . . , one skilled in the art clearly would not know how to use the claimed invention."

As discussed above, claims 1-13 have an asserted utility. It is further conceded in the Office Action that the specification is enabling for probes, primers, vectors and host cells (claims 1-10) (see page 7 of the Office Action dated July 13, 2000). Given that the specification enables Claims 1-10 as conceded in the Office Action, it is requested that the rejection of claims 1-10 under 35 U.S.C. § 112, first paragraph, at least, be withdrawn.

Claims 11-13 stand rejection under 35 U.S.C. § 112, first paragraph, because the specification is asserted as not reasonably providing enablement for gene therapy using the elected SEQ ID NO: 7056. Specifically, it "fails to provide adequate guidance regarding how one would have prepared a nucleic acid which when introduced into a host would induce an immune response against the protein encoded by said nucleic acid."

Applicants assert that the knowledge available to one of skill in the art at the time (prior to February 18, 1999), would have been sufficient for an individual of skill in the art to make and use the claimed nucleic acids in the form of a vaccine. Moreover, a specification need not provide that which is known in the art else a specification would become a production specification. Engel Industries Inc. v. The Lockformer Co., 20 U.S.P.Q. 2d 1300, 1304 (Fed. Cir. 1991). For example, prior to the filing of the instant application, several books on DNA vaccination had been published, including DNA VACCINATION: GENETIC VACCINATION (ed. H. Koprowski and D. B. Weiner, 1998) and GENE VACCINATION: THEORY AND PRACTICE (ed. E. Raz, 1998). Many *in vivo* studies using DNA to vaccinate subjects have also been performed. For example, plasmid DNA had been shown to evoke strong protection in mice immunized with a plasmid DNA encoding a mycobacterial protein (see attached article by D. B. Lowrie *et al.*, Vaccine 15: 834-8, 1997). Numerous methods of immunizing animals with bacterial DNA have been reported since 1995 (subsequent to the cited NIH report), which provide sufficient knowledge regarding the methods of making and using bacterial DNAs, such as those described in the instant specification, in the form of vaccines.

Accordingly, in light of the above arguments, Applicants respectfully request the appropriate withdrawal of the rejection of claims 11-13 under 35 U.S.C. § 112, first paragraph.

V. REJECTIONS UNDER 35 U.S.C. § 102

A. Claims 1, 5, and 10 in view of Haertl et al.

Claims 1, 5 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Haertl *et al.*, J. Clin. Microbiology 31: 128-33 (1993). Haertl *et al.* is cited for disclosing "an isolated nucleic acid of *Enterobacter cloacae* which would inherently comprise the claimed SEQ ID NO: 7056, and fragments of at least 10 nucleic acids, wherein the polynucleotide was DNA obtained from the entire genome of *Enterobacter cloacae*."

Applicants respectfully traverse the rejection. "Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claims". Jamesbury Corp. v. Litton Industrial Products, Inc., 225 U.S.P.Q. 253, 256 (Fed. Cir. 1985). Without conceding that Haertl et al. (or the references by Mitsutani and Lambert-Zechovsky et al. discussed below) is anticipatory of any of the subject matter canceled by way of amendment, Applicants assert that Haertl *et al.* do not anticipate the subject matter claimed in the amended claims. Specifically, Haertl *et al.* do not disclose or render obvious the nucleic acid sequence, SEQ ID NO: 1394 (SEQ ID NO: 7056 is the amino acid sequence which is encoded by SEQ ID NO: 1394 as indicated in Table 2 of the specification).

The authors discuss the small-fragment restriction endonuclease analysis (SF-REA fingerprinting) of 62 *E. cloacae* isolates. The isolates were also characterized using pulsed-field gel electrophoresis of *Not I*- or *Xba I*-generated genomic restriction fragments. Haertl *et al.* do not disclose any amino acid or nucleic acid sequence, let alone the isolated amino acid sequence of SEQ ID NO: 7056 and the isolated nucleic acid sequence of SEQ ID NO: 1394, or a nucleotide sequence of at least 8 nucleotides which hybridizes to SEQ ID NO: 1394 (see attached copy of the complete reference by Haertl *et al.*). The reference only provides a

means of differentiating *E. cloacae* strains using DNA fingerprinting to study the epidemiological relatedness of *E. cloacae* strains.

Accordingly, as the reference does not disclose or suggest a nucleic acid comprising SEQ ID NO: 1394 or the amino acid sequence of SEQ ID NO: 7056, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) appropriately be withdrawn.

B. Claims 1, 5 and 10 in view of Matsutani

Claims 1, 5 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matsutani, J. Bacteriology 173(24): 7802-9 (1991). Matsutani is cited for disclosing "the isolation of total double straned [*sic*] DNA from Enterobacter cloacae. Therefore the reference discloses an isolated nucleic acid of Enterobacter cloacae which would inherently comprise the claimed SEQ ID NO.7056 and fragments of at least 10 nucleic acids, wherein the polynucleotide was obtained from the entire genome of Enterobacter cloacae."

Respectfully, Matsutani does not disclose all the elements as recited in the amended claims and thus cannot anticipate Claims 1, 5 and 10 as amended. Matsutani does not disclose the isolated sequence of SEQ ID NO: 1394 nor does it disclose the protein sequence encoded thereby (SEQ ID NO: 7056). All Matsutani discloses is the isolation and characterization of DNA fragments comprising the repetitive sequence, IS1OR. Matsutani does not disclose a 669 nucleotide nucleic acid of SEQ ID NO: 1394, let alone the 223 amino acid sequence encoded thereby of SEQ ID NO: 7056 (see attached copy of complete reference by Matsutani). Additionally, SEQ ID NO: 1394 does not comprise the duplicated 9 bp consensus sequence (i.e., GCTNAGC, on page 7808, left col.) which comprises IS1OR.

Accordingly, as Matsutani does not provide all the elements of the invention as claimed, Applicants respectfully request the withdrawal of the rejection of Claims 1, 5 and 10 under 35 U.S.C. § 102(b) in view of Matsutani.

C. Claims 1, 5 and 10 in view of Lambert-Zechovsky et al.

Claims 1, 5 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Lambert-Zechovsky *et al.*, Clinical Infectious Diseases 15(1): 30-2 (1992). This reference was cited for disclosing "an isolated nucleic acid of *Enterobacter cloacae* which would inherently comprise the claimed SEQ ID NO.7056 and fragments of at least 10 nucleic acids."

Applicants submit that this reference, like those references discussed above, does not describe all the elements of Claims 1, 5 and 10 as amended. Specifically, the authors describe the restriction fragment length polymorphism (RFLP) analysis of five strains of *E. cloacae* DNA. The authors do not disclose any nucleic acid sequence, let alone the 669 nucleotide sequence of SEQ ID NO: 1394. Nor does the article by Lambert-Zechovsky *et al.* disclose any polypeptide sequence let alone an amino acid sequence compising the 223 residues of SEQ ID NO: 7056. Additionally, RFLP analysis of total RNA from *E. cloacae* does not teach or suggest an isolated nucleic acid sequence of at least eight nucleotides which can hybridize to SEQ ID NO: 1394.

Consequently, the reference does not teach all the elements of Claim 1, 5 and 10 as amended. Thus, Applicants respectfully request withdrawal of rejection under 35 U.S.C. § 102(b) of Claims 1, 5 and 10.

CONCLUSION

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that prosecution of this application may be expedited.

Respectfully submitted,

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